

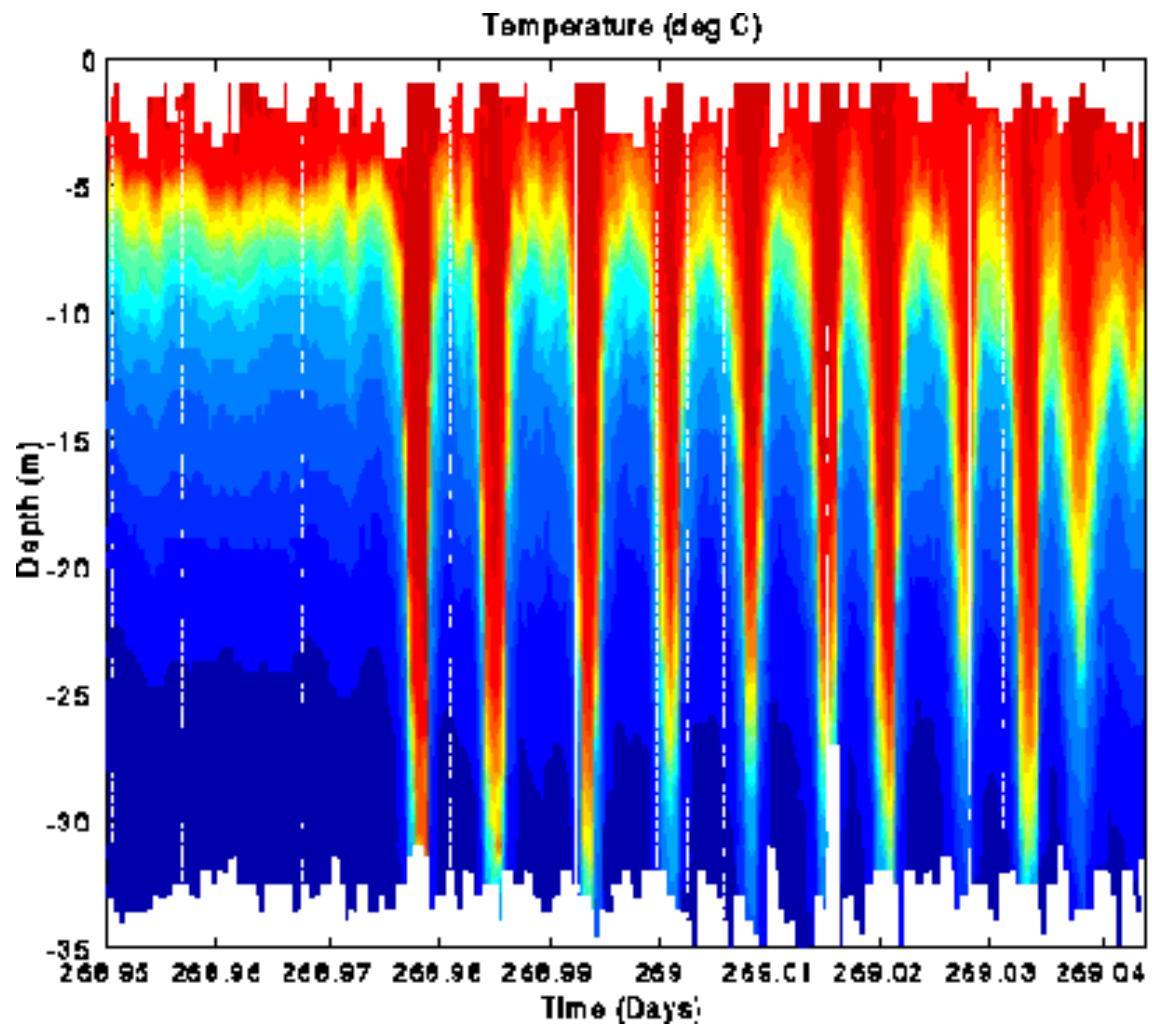
Lien, R.-C., and M. C. Gregg (2001),  
Observations of turbulence in a tidal beam  
and across a coastal ridge, *J. Geophys. Res.*,  
106, 4575–4591

<http://www.es.flinders.edu.au/~mattom/IntroOc/notes/figures/fig10a7.html>



Space Shuttle  
Flight 41G; 36N,  
5.5W, 12:04:04  
GMT, 11 Oct 1984

Overview of a soliton surge through the Strait of Gibraltar into the Alboran Sea. Once a day the high tide produces sufficient energy to create solitons atop the strong density boundary between the dense bottom water flowing west into the Atlantic Ocean and the less



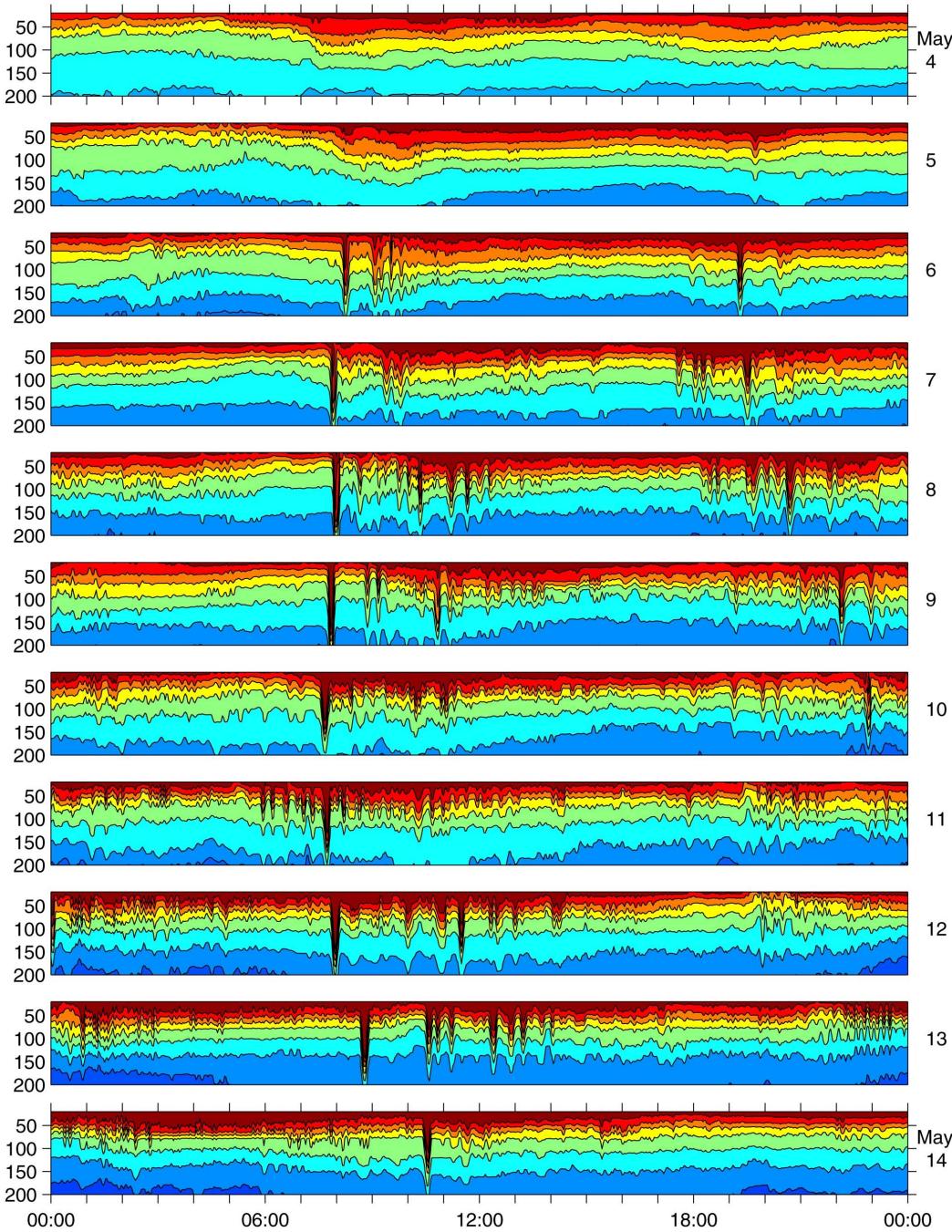
Observation of the upper ocean near the shelf break off northern Oregon made from FLIP in Oct. 1995. >18000 profiles of T, S, and thermal and kinetic energy dissipation rates were measured by an automated Loose-tethered Microstructure Profiler every 80 s.

Energetic solitons generated near the shelf break propagated shoreward past FLIP, which was tri-moored in 150m of water. Extremely nonlinear solitons, with downward displacements of 25m from a 7m pycnocline depth were observed on the leading



S07-05-245  
Flight STS-7;  
18.5N, 111.5E,  
23 June 1983

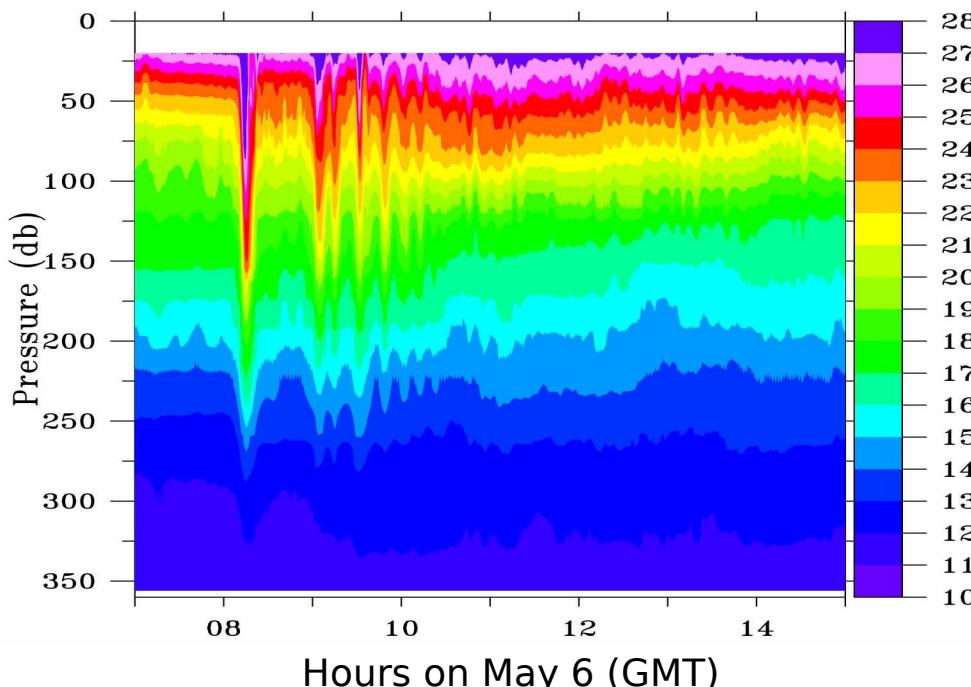
4 sets of such internal waves observed by the Challenger's crew as they orbited over Hainan Island and the South China Sea. The waves, each



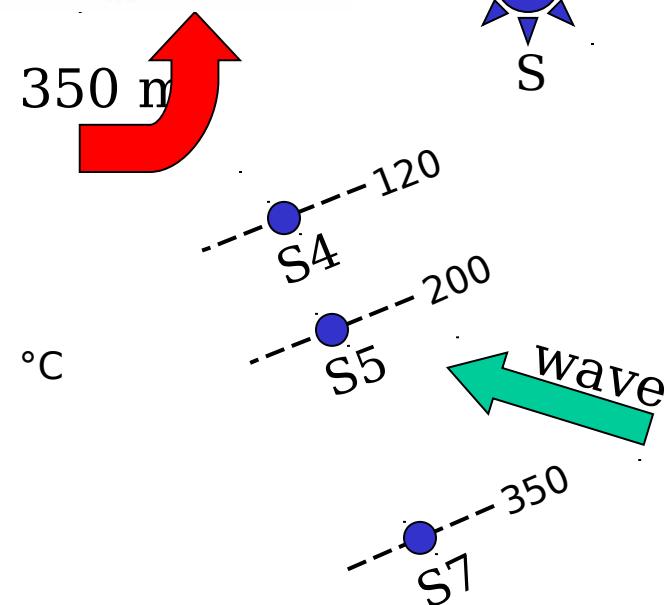
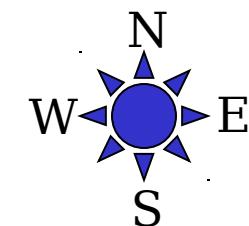
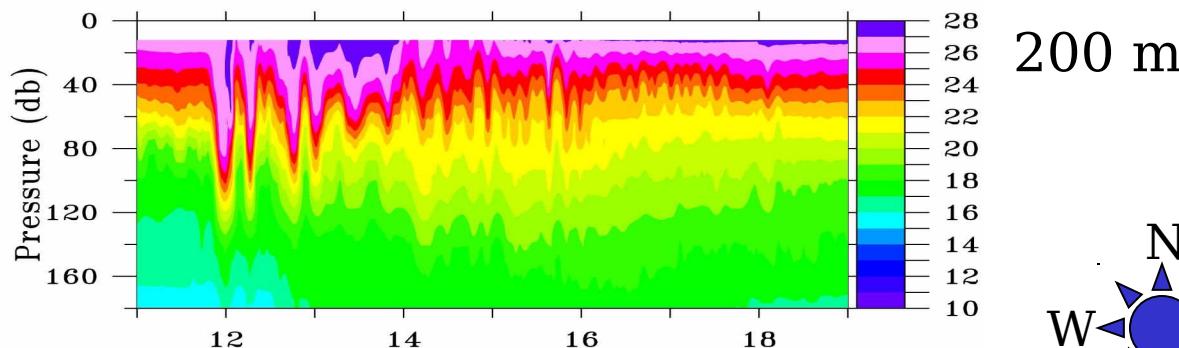
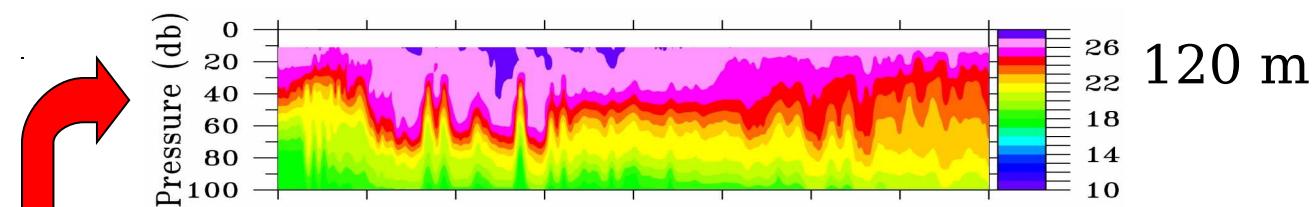
Stack plot of T at mooring S7 on the 350 m isobath. The bottom 150 m are not shown to allow a clearer presentation of the internal wave structure. Each panel is one day (May 4 - 14, 2001) from 0000 to 2400 hours.

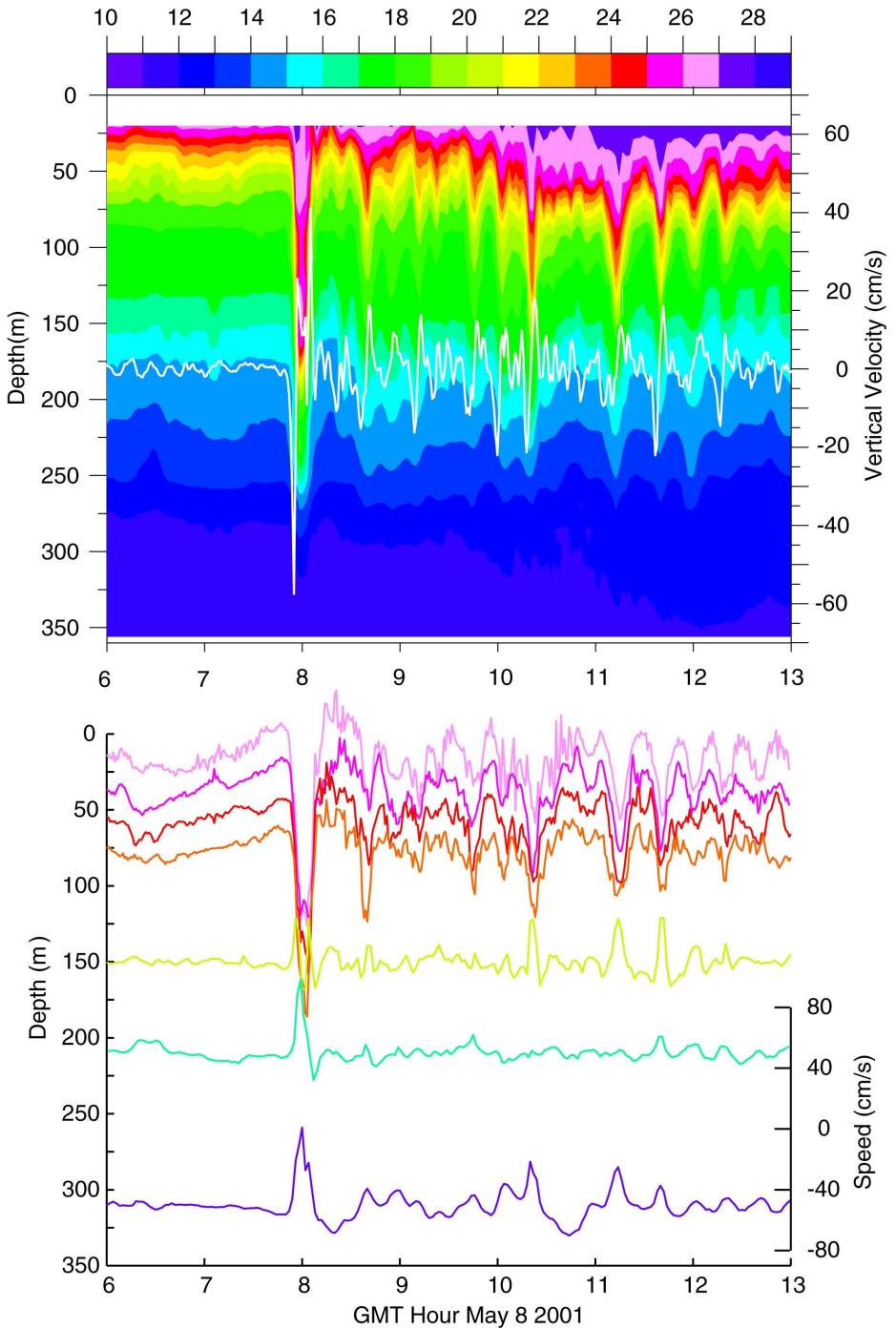
ASIAEX  
Temperature  
May 6, 2001

Wave  
Evolution  
Towards  
Shallower  
Water



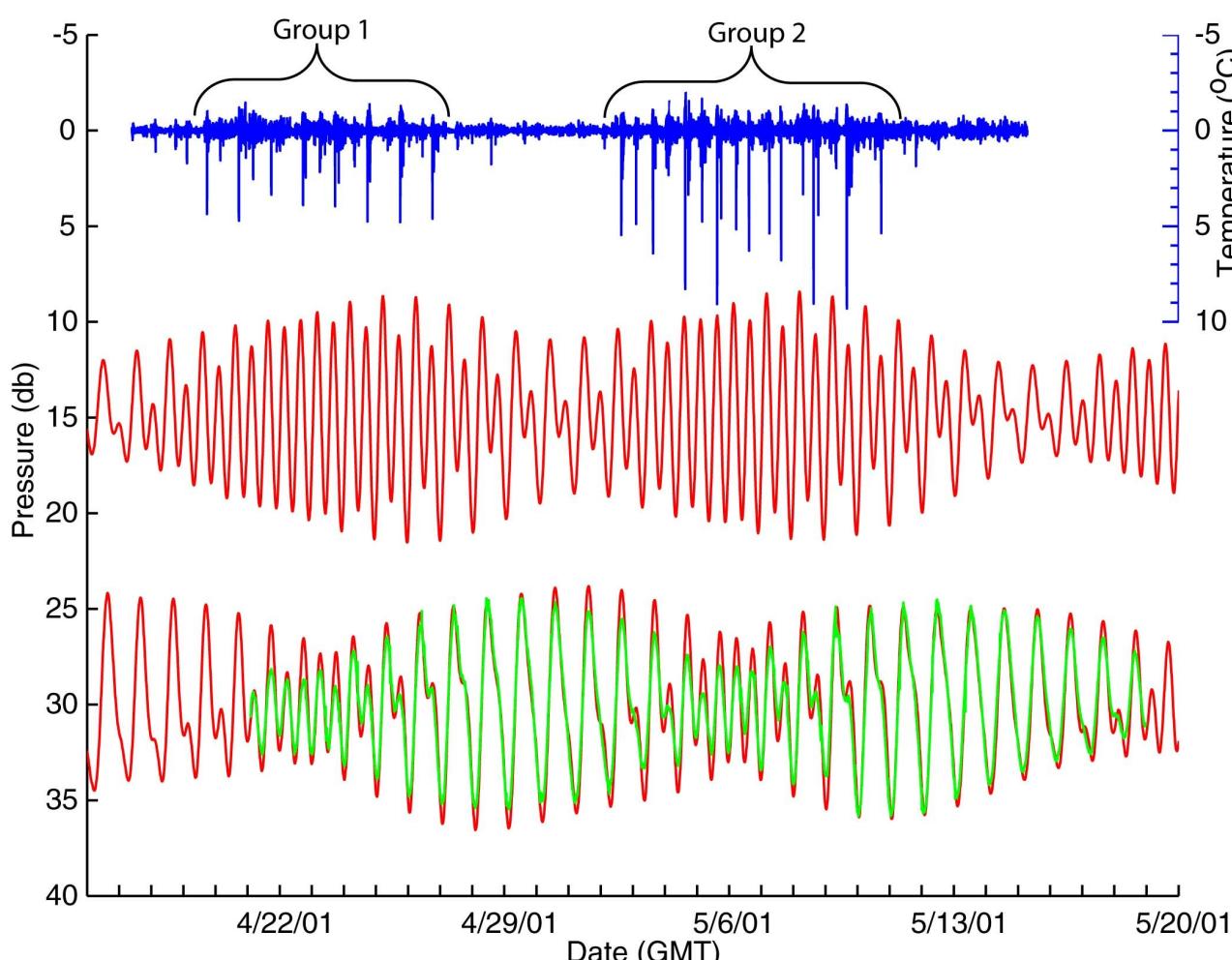
Ramp et al., 2003





T and w (top panel), and u (bottom panel) for the May 8 soliton packet observed at ASIAEX mooring S7 on the 350 m isobath. w, white line, was sampled by the 90-m ADCP range cell, one of the closest bins to the transducer heads. The upper layer horizontal velocities are from the ADCP and the lower layer

Ramp et al., 2003



Ramp et al., 2006

**Observed** and **PCTides-generated** barotropic tidal amplitudes at S7 on the Chinese continental slope. *Middle:* The barotropic tidal height in Luzon Strait, as computed by the global tidal model PCTides. *Top:* T at 140 m at site S7 on the 350 m isobath, phase-shifted 3.7 days to the left (earlier) to account for the propagation time between the proposed generation site (Luzon Strait) and the mooring. All the pressure time series had the